

(916) 654-4715

March 16, 1992

Members, Alternates, and Observers,  
California Traffic Control  
Devices Committee

Enclosed for your use, is a copy of the minutes from the February 19, 1992 CTCDC meeting in Redding.

The next CTCDC meeting is tentatively scheduled for May 21, 1992 in Palm Desert.

Sincerely,

Jack M. Kletzman  
Executive Secretary, CTCDC

Enclosure

## MINUTES

### **CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE MEETING OF FEBRUARY 19, 1992**

The first meeting of the CTCDC in 1992 was held in the Council Chambers of Redding City Hall on Wednesday, February 19, 1992.

Chairman Bruce Carter opened the meeting at 9:00 a.m. with the introduction of members and guests. The Chairman thanked the City of Redding for its hospitality and the special efforts of Ray Duryee and Jerry Taylor on behalf of the Committee.

The following members, alternates, and guests were in attendance:

<b>ATTENDEES</b>	<b>ORGANIZATION</b>	<b>TELEPHONE</b>
Members (Voting)		
Bruce Carter Chairman	County Supervisors Association of California, Redding	(916) 225-5661
Mike Howard Vice-Chairman	California Highway Patrol, Sacramento	(916) 657-7222
Joe Bass	League of California Cities, San Jose	(408) 277-4304
Roger Burger	County Supervisors Association of California, Alhambra	(818) 458-4014
Dick Folkers	League of California Cities, Palm Desert	(619) 346-0611
Gary Foxen	Auto Club of Southern California, Los Angeles	(213) 741-4429
Perry Lowden	Caltrans, Sacramento	(916) 654-4551
Russ Taft (acting)	California State Automobile Association, San Francisco	(415) 565-2304
Jack Kletzman Secretary	Caltrans, Sacramento	(916) 654-4715

**CTCDC MINUTES  
FEBRUARY 19, 1992**

<b>ATTENDEES</b>	<b>ORGANIZATION</b>	<b>TELEPHONE</b>
Merry Banks	Calif. State Auto. Assoc.	(415) 565-2297
Harold Becker	Econolite Control Products	(714) 630-3700
Dee Bennett	Caltrans, Redding	(916) 225-3409
Lowell Britain	Shasta County D.P.W.	(916) 225-5661
Bob Brow	Sacramento County	(916) 366-2227
Matthew Brown	Prolane Products	(310) 207-3431
Sean Charles	Caltrans, Redding	(916) 225-3491
Don Comstock	Caltrans, Eureka	(707) 445-7421
Autar Chhina	Calif. Public Utilities Comm.	(415) 557-3674
Bob Donner	Caltrans, Sacramento	(916) 654-4949
Ray Duryee	City of Redding	(916) 225-4470
James Elgin	Caltrans, Redding	(916) 225-3573
George Farnsworth	Humbolt County	(707) 445-7421
Randy Foust	Sacramento County	(916) 440-5966
A. J. Girardot	Wilcox Sales	(714) 624-6674
John Gomes	Caltrans, Sacramento	(916) 654-4336
Fred Jager	Caltrans, Sacramento	(916) 654-5528
Haji Jameel	Calif. Public Utilities Comm.	(415) 557-3630
Sam Johnson	Caltrans, Marysville	(916) 741-4370
Brian McDermott	Siskiyou County	(916) 842-8250
Dan Navone	Brite-Line Industries	(209) 946-4385
Jack Navone	Alpha Engineers	(209) 367-1434

Eric Orr	Caltrans, Redding	(916) 225-3491
Hal Rosenberg	City of Chula Vista	(619) 691-5116

**CTCDC MINUTES  
FEBRUARY 19, 1992**

<b>ATTENDEES</b>	<b>ORGANIZATION</b>	<b>TELEPHONE</b>
Rick Rigsby	Caltrans, Redding	(916) 225-3088
Terry Taylor	City of Redding	(916) 225-4470
Joan Pontias	Caltrans, Marysville	(916) 741-4362
John Van Hoff	City of Sacramento	(916) 264-5307
Greg Watkins	U.S. Forest Service	(510) 825-9800
Bob Zeigler	Marin County, D.P.W.	(415) 499-6570

**CTCDC MINUTES  
FEBRUARY 19, 1992**

**ELECTION OF OFFICERS**

The Committee unanimously voted to elect Mr. Mike Howard as the new chairman and Mr. Dick Folkers to succeed Howard as vice-chairman. The Committee expressed its appreciation for the charismatic leadership by Bruce Carter.

**MINUTES**

MOTION: By Perry Lowden, second by Gary Foxen, to adopt the minutes of the Ontario meeting on July 25, 1991. Motion carried 8-0.

**89-9        EMERGENCY VEHICLE APPROACHING SIGN**

Dick Folkers said that he had no contact from Mr. R. C. Anderson. Mr. Van Hoff from the City of Sacramento said, the city had worked out an agreement with Mr. Anderson and expected to install the signs within the next few months. This experiment is independent of RR-XING EMERGENCY SIGN ( Item 92-1 ).

ACTION: Item continued.

**90-6        AUDIBLE PEDESTRIAN SIGNALS**

Roger Burger presented the the sub-committee's recommendations. Burger stressed the need for statewide uniformity of sound emission and that this was not a proprietary item. Members of the Committee said that their agencies do respond to requests from individuals for audible signals at specific locations. Individual or group requests have not led to mass retrofit of existing signals.

Burger felt it was not a public agency responsibility to conduct training for the visually impaired, but agencies might wish to make presentations to demonstrate the use of this device to interested groups. The wording of paragraph six was meant to allow the device to be installed even though the requesting group does not provide training. The City of San Diego has developed a warrant sheet to prioritize installations for those local agencies having more requests than can be financially accommodated.

The sound standard recommendations apply to new facilities. Joe Bass said the cost to retrofit sound installations was not prohibitive. Burger said that the term 'basic audible signal' referred to the "cuckoo" and "peep-peep" sound and the term 'special audible signal' referred to other locating devices.

The Committee discussed the financing provisions of the recommendation and revised the basic signal cost to specifically apply to State Highways. The revised text reads, " The cost of installing 'Basic' Audible Pedestrian Signals on State Highways, shall be shared with the local agency in the same manner as a traffic signal." The Committee deleted the reference to special signals whose cost is born by the local agency.

**CTCDC MINUTES  
FEBRUARY 19, 1992**

**90-6 AUDIBLE PEDESTRIAN SIGNALS (continued)**

MOTION: By Dick Folkers, second by Joe Bass, to accept the amended sub-committee recommendation. Motion carried 8-0

ACTION: Item complete. Interim copies of the revised recommendation are available from the Secretary

**90-10 CRITERIA FOR SPEED LIMITS ON LOCAL STREETS**

Dick Folkers said that the Riverside County Department of Transportation has a safety task force studying, among other things, how to have residential streets zoned for a 25 m.p.h. speed limit. The task force has not completed its findings. Folkers recommended that the Committee wait for the task force recommendations.

ACTION: Item continued.

**91-7 LIGHT RAIL ALTERNATE FLASHING RED SIGNAL**

Russ Taft asked that his sub-committee be referred to as the Light Rail Safety Sub-committee. The California P.U.C., in conjunction with the Light Rail Safety Sub-committee, has developed an accident report form to more accurately define light rail accidents. Past accident data is unclear, unless examining specific accident reports. Local light rail jurisdictions were asked to track their own accident statistics.

Using California P.U.C. accident data, the sub-committee found, where the light rail had a median right-of-way, that 52% to 63% of the accidents at controlled intersections involved illegal left turning vehicles struck by overtaking light rail. This exists for every jurisdiction. There is no similar problem with right turning vehicles. Taft noted that in addition to concern for the safety of errant motorists, trains carry as many as three hundred passengers who can be injured even in a near miss.

Recommendations to the Committee, based on light rail agency advice, are as follows:

1. The intersections where left turning actions are a problem, should employ active signing or signaling.
2. This active signing or signaling should:
  - Be activated by approaching light rail vehicle.
  - Be coordinated with any traffic control devices present.
  - Indicate what movement is prohibited.
  - Indicate why a movement is prohibited.
  - Employ LED technology where possible.

The next meeting of the Light Rail Safety Sub-committee will be July 30, 1992 at the offices of the California State Automobile Association in San Francisco.

**CTCDC MINUTES  
FEBRUARY 19, 1992**

**91-7 LIGHT RAIL ALTERNATE FLASHING RED SIGNAL (continued)**

Gary Foxen said that motorists normally obey red arrow signals prohibiting a left turn. The fact that motorists disregard left turn signals at light rail intersections indicates something is peculiar to that type of intersection. Taft hopes data from the new report form will provide the explanation of this phenomenon.

Roger Burger said he has observed, that in some areas of Los Angeles, motorists stop for a red indication but then disregard the red indication and proceed through the intersection when they believe there is sufficient clearance to do so. When this happens traffic volumes are generally low. The L.A. / Long Beach light rail line found 70% of its accidents last year could be attributed to left turn vehicles. He suggested that the new accident form classify the traffic density.

Joe Bass believes that motorists might be misled when they see no opposing traffic and fail to notice the light rail vehicle approaching from behind. Bass suggested that data be collected to indicate the significance of these types of accidents and the establishment of warrants for implementation of traffic devices.

Joe Bass felt that gates were inappropriate because of costs and the difficulty of fitting them into existing intersections. Mike Howard agreed that gates were a problem. Motorist drive right through them and they are expensive to repair.

Russ Taft said that San Francisco had one of lowest accident rates for this particular problem. This might be due to motorist awareness, since they have had light rail for over seventy years. A length of service correlation study has not yet been started.

Joe Bass believes that audible signals could be useful. In areas not sensitive to noise, an audible alert would serve as a wake up call to inattentive motorists. Light rail has existing audible warning devices such as bells, whistles, and loud speakers. Operators are reluctant to use these devices because of the disturbance to others.

Hal Rosenberg suggested that poor design of the system may cause this type of accident. The fault may not be that of the motorist, who is unaware of the unusual condition. A better design might exist if light rail would have some areas of shared right of way with a degree of forgiveness built into any left turn. He said that San Diego avoided the problem by prohibiting left turns. Rosenberg was also concerned about the clarity of meaning from any symbol signal.

Harold Becker, representing Econolite, agreed that people don't always know how to interpret signals, especially the illiterate. He feels that, in order to attract the motorists attention, a flashing signal is needed and, in a multi-cultural setting, an international symbol may be required.

ACTION: Item continued.



**CTCDC MINUTES  
FEBRUARY 19, 1992**

**92-1 RR-XING EMERGENCY SIGN**

Mike Howard said that he was unable to contact Mr. R.C. Anderson directly, but he saw the sign at Ellis and Ellis, the manufacturer. Howard feels these signs are no different than signs already in use and recommends this agenda item be deleted.

MOTION: By Mike Howard, second by Dick Folkers, to delete the agenda item. Motion carried 8-0.

ACTION: Item deleted.

**92-2 STOP AHEAD SYMBOL SIGN**

Bruce Carter feels the stop ahead symbol sign (W17) and the yield ahead symbol sign (W28), when used in a construction zone, have inadequate visibility at night. Both are red on orange. Carter said he was aware of the origin of orange for construction and that this problem has already been brought to the attention of the national committee and rejected in 1983. Carter remains of the opinion that these signs are unsatisfactory. Other members of the Committee agreed. The national committee has formed a sub-committee to re-study the problem. Perry Lowden reminded the Committee that any yellow sign is more visible than an orange sign. This was the trade off that was accepted twenty years ago when orange was adopted for construction zones. Hal Rosenberg suggested Carter get a consensus to present to the national sub-committee.

MOTION: By Russ Taft, second by Dick Folkers, to consider removing these signs from the Manual on Uniform Traffic Control Devices. Motion carried 8-0.

ACTION: Item complete.

**92-3 TOW AWAY ZONE SYMBOL SIGN**

Dick Folkers, at the request of the City of Santa Ana, asked for a recommendation from the Committee to adopt the tow away symbol sign designated as R7-201a in the MUTCD for the Traffic Manual. Perry Lowden stated that not all legal signs are in the Traffic Manual.

MOTION: By Dick Folkers, second by Perry Lowden, to have the Secretary notify the City of Santa Ana that the symbol sign is acceptable for use. Motion carried 8-0.

ACTION: Item complete.

**CTCDC MINUTES  
FEBRUARY 19, 1992**

**92-4      TRAFFIC SIGNAL DIMMING**

Joe Bass asked the Committee to sanction a year long experiment to determine the effectiveness and energy efficiency of using light emitting diode (LED) red lenses at intersections in San Jose. The second part of the experiment would be to use controllers to reduce night wattage.

Light intensity for traffic signals is set for daylight hours and run at that level for twenty four hours. Running lights at the maximum intensity at night wastes power. New controllers allow variations in power to traffic signals. Photo cells could be used to determine sufficient darkness and a programmed time could select the appropriate period of night. When both conditions were met, power would be reduced to traffic signals. The energy bill for traffic signals last year was approximately \$900,000. If these measures are successful, the city's energy cost could be dramatically reduced.

Mike Howard pointed out that increased illumination is needed in fog or rain during night hours. He asked how inclement weather affected the attempt to reduce power. Bass responded that San Jose has a traffic signal management program. All traffic signals are put on computerized interactive communication which allow controllers to be over ridden from a central location. During adverse weather conditions the controllers could be set back to standard operations.

Gary Foxen asked whether competing lights in an urban area had been considered. Bass said they had been considered and as a result, none of the test sites were in urban areas.

Roger Burger said that his experience indicated dimming devices have a short life. When they fail the signal reverts to the conflict mode, where all signals flash red. The cost of sending out a repair technician far exceeded any energy savings.

Bob Donner said that there is a proposed NCHRP Project 5-12, entitled "Requirements for Application of Light Emitting Diodes (LEDs) to Traffic Control Signals," and the proposed experiment may be redundant. He questioned whether the proposed LED signal heads met existing ITE requirements for distribution standards. Bass understood that the dimmed intensity met the minimum requirements and will have his staff contact Donner to insure there is no problem.

MOTION: By Dick Folkers, second by Roger Burger, for the City of San Jose to conduct experiments using light emitting diodes and night dimming of traffic signals to reduce power costs. Motion carried 8-0.

ACTION: Item continued.

**CTCDC MINUTES  
FEBRUARY 19, 1992**

**92-5        LIGHT EMITTING DIODE PEDESTRIAN  
              SIGNAL HEADS**

Joe Bass said the National Committee on Traffic Control Devices suggested that San Jose not proceed with testing because of LED color reproduction problems. Lunar white, the current standard, cannot be reproduced with LEDs. Pedestrian signals would have to revert to the old standard which was green. The savings may be worth it, but that issue must be resolved at the national level.

Bass asked that this item be withdrawn.

ACTION: Item withdrawn.

**92-6        FLASHING BEACONS FOR VISIBILITY IN FOG**

Russ Taft introduced Mr. Randy Buchanan who is the School Safety Traffic Patrol Officer for the City of Modesto. Last year Buchanan proposed a flashing beacon sign to ease the problem of poor visibility at school intersections in foggy weather. The Committee did not feel this was an appropriate solution and suggested a standard construction barrier with a flashing beacon placed outside of the travelled way.

Buchanan said the safety patrol students could not handle the steel barricade because of the weight. When the custodian puts the barricade out, they stay out all day and the motorists ignore them. The key to a successful operation is to have the students take the devices out and bring them back each time they come off duty. Buchanan demonstrated his device to the Committee. The device is a light weight, battery operated, flashing beacon, with a rubber base, handle, and an on-off switch. Devices were placed on the curb or side of the street about 100 feet from the intersection. They worked well. Motorists reacted to the device by slowing down. Visibility was good, motorists expected pedestrian traffic when the light was flashing, the safety patrol was able to set up and operate the device, and none of the devices were hit by cars. The device, placed on each side of the street facing traffic, is only used during foggy periods. When there are parked cars, the device is placed further out in the street. Buchanan asked for Committee approval.

Gary Foxen asked if the city would be in trouble if fog existed and the devices were not in place. Buchanan agreed it was possible, but their legal counsel felt it was more of a problem if there were no devices. Many unprotected intersections exist in any event, since these devices are limited to school crossings.

Buchanan told the Committee that the teacher in charge, based on a set visibility distance, determines when the fog is sufficiently dense to employ the device. The device weighs about 12 pounds. It does not appear desirable to have back to back flashers because of the additional battery weight and the confusion to motorists.

**CTCDC MINUTES  
FEBRUARY 19, 1992**

**92-6 FLASHING BEACONS FOR VISIBILITY IN FOG (continued)**

Mike Howard questioned if approval from the Committee was necessary since flashers are permitted for school-xing warning signs. Russ Taft responded that Buchanan wanted to inform the Committee of their action and wanted to avoid permanent flashing lights. Temporary or movable flashing lights do not appear to be covered in the Traffic Manual. Buchanan said there were other people, who are interested in this device, because their areas have the same problem.

Hal Rosenberg voiced concern that there may be pressure from schools to use this device for non-fog conditions. Buchanan said the device was useless during non-fog conditions because the light is not readily visible.

A member of the audience asked if this device might become a lethal projectile if struck by a vehicle. The placement of the device minimizes the opportunity for this danger and if it were hit, it would be less hazardous than a barricade. So far no device has been hit. When hit, the device should pop out and lay down.

Another member of the audience asked if this procedure were in conflict with Section 10-01.3 of the Traffic Manual which requires engineering judgement. Joe Bass responded that the Committee makes these types of determinations all the time and the execution is left to others. Bruce Carter commented that it is the purpose of the Committee to approve helpful devices, and he perceives this device as good. Bass saw no conflict in the fact that non-engineers would determine when to employ this device because it would be under general directions set forth by engineers.

Perry Lowden asked how the device fared when large volumes of cars pick up or drop off school children. Buchanan responded that there is a fifty to one-hundred foot red zone in front of the school which prohibits parking. The intent is to keep the motorists from blocking the red zone, but that isn't always possible. Mornings are seldom a problem, but afternoons when parents are waiting for children parking can be difficult. The safety patrol will have to adjust to existing situations because there is no fixed pattern.

The Committee discussed whether the request should be for experimentation and concluded that using a flasher in conjunction with a warning sign is a standard device. This proposal is a variation of this standard. Buchanan was asked to let the Committee know how successful the device worked after a year of use.

MOTION: By Mike Howard, second by Dick Folkers, the Committee approve this device provided the device is not placed in the traveled way. Motion carried 8-0.

ACTION: Item complete.

**CTCDC MINUTES  
FEBRUARY 19, 1992**

**INFORMATION ITEMS**

**89-11 ILLUMINATED SCHOOL-XING STOP PADDLE**

Dick Folkers said the City of Palm Desert experimented with a stop paddle to get reaction from the Sheriff's department. The sign was heavy and the belt pack created a problem. The supplier is taking these suggestions and ones concerning reflectorization and is modifying the stop paddle. Bruce Carter passed out information concerning a similar experiment for a flashing light addition to the STOP/SLOW paddle used in construction zones.

**91-8 ADVERTISEMENT ON SIGNAL STANDARDS**

Bruce Carter announced that the letter to the City of Monrovia, which said that putting advertisements on traffic signal mast arms was ill-advised had been sent. There was no response from the city. Roger Burger noted that the City Department of Public Works staff was, itself, reluctant to compromise the traffic signals and appreciated the Committee's substantiation.

**92-A TRAFFIC CONTROLS FOR STREET AND HIGHWAY  
CONSTRUCTION/MAINTENANCE UTILITY AND  
EMERGENCY OPERATIONS**

Mr. Perez of the City of San Diego had suggested that the Committee do something about pedestrian and worker safety. Bruce Carter asked to delay consideration until national guidelines were available.

Carter told the Committee that the National Committee on Uniform Traffic Control Devices has re-written a draft farmed out to a consultant by the FHWA. The rework was done by its technical committee and is now being reviewed by the FHWA. An FHWA approved draft is not yet available. The FHWA announced at the January meeting that they intend to redo the entire manual by 1995. Part of the revision includes metrification. The national committee does not believe the FHWA will be able to complete, approve, and print the new manual by 1995. The national committee recommended the FHWA adopt the draft, and send it out as a separate Chapter 6 for Construction and Maintenance.

**92-B DISABLED PERSON TOW AWAY SIGN**

Perry Lowden said that an omnibus bill, passed by the Legislature, required that any new or replacement sign installed on or after January 1, 1992, relative to parking privileges for disabled persons, shall refer to disabled persons rather than physically handicapped persons. Caltrans has revised a tow away sign, R100B, accordingly.

**CTCDC MINUTES  
FEBRUARY 19, 1992**

**OFF AGENDA ITEMS**

Dick Folkers said the City of Tulare felt that the standard fire warning sign is inappropriate for other emergency operations. The city is asking for approval of a proposed emergency vehicle sign and symbol. Russ Taft is concerned with the white cross when other signs are yellow and black. Perry Lowden suggested using a diamond shaped sign with the message EMERGENCY VEHICLES. The proposed symbol shape is confusing because of the variety of emergency vehicles. Joe Bass suggested that Caltrans draft a proposed plate for Committee approval.

Joe Bass said Mr. Fred Gueldner, an officer with a company called Roto-Flector, asked the committee to discuss a new wind powered device called roto-flector. The purpose of the device is unknown. Mr. Gueldner seeks approval for experimentation.

Russ Taft asked that School Area Pedestrian Safety, Section 10-07.14, of the Traffic Manual be revised to reflect current practice. Taft proposed that the word "overseas type" be deleted and permit any type of fluorescent yellow or orange cap or helmet. Overseas caps have not been used for a long time.

Roger Burger introduced Mr. Matthew Brown who is a distributor for a mechanical flagger used in construction zones. Mr. Brown presented an information report on his product. The mechanical flagger is used in hazardous situations or where traffic needs to be alerted. This device does not make decisions and is not intended to replace humans. California has replaced flags with STOP/SLOW paddles.

The County of Marin requested the formation of a sub-committee to study on the safety of school cross walks. ITE volunteers would staff an update of Los Angeles and San Diego studies conducted in the 1970s. The consensus of the Committee was to support and encourage the new study. Some members of the Committee volunteered to serve on the sub-committee and Bruce Carter asked the Secretary to notify Marin County of its support.

Special thanks went to Mr. John Gomes for past services to the Committee as Executive Secretary. Mr. Gomes is about to retire from Caltrans.

**ADJOURNMENT**

MOTION: By Russ Taft, second by Gary Foxen, for adjournment of the meeting. Motion carried 8-0. The meeting was adjourned at 3:30 p.m.